

**Supplemental Specification
2005 Standard Specification Book**

SECTION 13592

**ROADWAY WEATHER INFORMATION SYSTEM -
ENVIRONMENTAL SENSOR STATION (RWIS-ESS)**

Delete Section 13592 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. RWIS Site Preparation
 - 1. Install buried conduit in accordance with industry standards.
 - 2. Install junction boxes with grounding rods, tower foundation, and fencing, as specified in the contract or as directed by a UDOT representative.

1.2 RELATED SECTIONS

- A. Section 02324: Compaction
- B. Section 02330: Embankment
- C. Section 02776: Concrete Sidewalk, Median Filler, and Flatwork
- D. Section 02821: Chain Link Fencing and Gates
- E. Section 03055: Portland Cement Concrete
- F. Section 03211: Reinforcing Steel and Welded Wire
- G. Section 03310: Structural Concrete
- H. Section 13553: ATMS Conduit
- I. Section 13554: Polymer Concrete Junction Box

1.3 REFERENCES

- A. American National Standards Institute (ANSI)
- B. National Electrical Code (NEC)
- C. Underwriters Laboratory (UL)

1.4 SUBMITTALS

- A. Provide a preliminary installation schedule to the Engineer 30 days before the start of work.

PART 2 PRODUCTS

2.1 POWER

- A. Use electrical components as listed and defined by the National Electrical Code (NEC).
- B. Supply conduit per Section 13553, junction boxes per Section 13554, and ground rods per Section 13554 and NEC 250.
- C. Use 4-inch schedule 40 galvanized pole for solar power only.

2.2 RPU TOWER FOUNDATION AND SERVICE PAD

- A. Compact according to Section 02324
- B. Use Class AA (AE) concrete per Section 03055
- C. Use 6-6-10-10 welded wire mesh per Section 03211.

2.3 TOWER GROUNDING SYSTEM

- A. Wire: State-Furnished 32 strand, #210 weight, $\frac{7}{16}$ -inch tinned copper ground cable. Refer to AT Series Standard Drawings and NEC 250.
- B. Ground Rod: Furnish $\frac{5}{8}$ -inch diameter 8-foot copper clad. Refer to AT Series Standard Drawings, NEC 250, and ANSI/UL 467.

2.4 ENVIRONMENTAL SENSORS, REMOTE PROCESSING UNIT (RPU), COMMUNICATION EQUIPMENT, AND RWIS TOWER

- A. State-Furnished.

2.5 FENCE AND GATE

- A. Furnish 7-foot high Type IV chain-link fence, with barbed wire and arm, and gate. Refer to FG Series Standard Drawings, AT Series Standard Drawings, and Section 02821.

PART 3 EXECUTION

3.1 GENERAL

- A. Conform to the requirements of the National Electrical Code (NEC).
- B. Obtain Engineer approval for tower site location and pavement sensor placement before construction.
- C. Notify the Engineer seven calendar days before desired pick-up of State-Furnished materials.
- D. Pick up State-Furnished materials at the following location:

Utah Department of Transportation
Traffic Operations Center (TOC)
2060 South 2760 West
Salt Lake City, Utah 84104-4592

- E. Install conduit per Section 13553, junction boxes per Section 13554, and ground rods per Section 13554 and NEC 250.
- F. Install all State-Furnished materials per manufacturers' instructions.

3.2 RPU TOWER FOUNDATION AND SERVICE PAD

- A. Install concrete foundation and service pad. Refer to Sections 03055 and 03211.
- B. Provide all necessary grading for a flat and level site. Refer to Section 02330 if necessary.

- C. Finish all surface concrete with Ordinary Surface Finish per Section 03310.
- D. RPU and tower installed by the Department.

3.3 TOWER GROUNDING SYSTEM

- A. Wire (Installed by the Department): Install one ground cable for each tower leg. Clamp wire to the outside ground rod (10 feet from tower leg) and run to the inside ground rod (3 feet from tower leg). Clamp wire to the inside ground rod. **DO NOT cut the wire.** Run the wire across the top of the concrete pad (Refer to Section 02776) to the corner of the RWIS tower. Attach grounding wire to the tower.
- B. Ground Rod: Install as per AT Series Standard Drawings.

3.4 ENVIRONMENTAL SENSORS

- A. Installed by the Department.

3.5 REMOTE PROCESSING UNIT (RPU)

- A. Installed by the Department.

3.6 COMMUNICATION EQUIPMENT

- A. Installed by the Department.

3.7 RWIS TOWER

- A. Install tower base only. Refer to AT Series Standard Drawings.

3.8 FENCE AND GATE

- A. Install chain link fence and gate per Section 02821.
- B. Install 7-foot high Type IV fence, with barbed wire and arm, and gates per AT Series Standard Drawings and FG Series Standard Drawings.

END OF SECTION